

Chemical Analysis Report

NE-DIST-2022-06-21-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Nassau North Boat 2022**
Request ID: **RQ-2022-06-20-13**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 12-JUL-2022 09:54



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Plummer Creek @ Second Island

Collection Date/Time: 06/20/2022 10:20

Field ID: G4NE0301

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335949	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P415502	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P415769	
	SM 2540 D-2011	TSS	11		mg/L	P415895	
	SM 4500-F- C-2011	Fluoride	0.26		mg F/L	P415773	
2335950	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P415991	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P415785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P416201	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P415811	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P415622	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: St Marys River @ Bend 4.5 Miles

Collection Date/Time: 06/20/2022 12:00

Field ID: 19010131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335951	DEP SOP: NU-094-1	Color (true)**	410		PCU	P415506	
	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P415503	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P415942	
		Sulfate	1.4		mg SO4/L	P415947	
	SM 2320 B-2011	Total Alkalinity	8.7		mg CaCO3/L	P415768	
	SM 2540 C-2011	TDS	80		mg/L	P415902	
	SM 2540 D-2011	TSS	2	I	mg/L	P415891	
2335952	SM 4500-F- C-2011	Fluoride	0.061	I	mg F/L	P415772	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P415881	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P415787	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.095		mg N/L	P416226	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P415814	
2335960	SM 5310 B-2011	Organic Carbon	30		mg C/L	P415622	
	EPA 200.7 Rev. 4.4	Calcium	5.18		mg/L	P415516	
		Iron	870		ug/L	P415516	
		Magnesium	2.01		mg/L	P415516	
		Potassium	0.44	I	mg/L	P415516	
		Sodium	4.1		mg/L	P415516	
		Strontium	26.8		ug/L	P415516	
		Tin	3.0	U	ug/L	P415516	
		Titanium	3.5		ug/L	P415516	
		Vanadium	2.0	U	ug/L	P415516	
		Zinc	5.0	U	ug/L	P415516	
	EPA 200.8 Rev. 5.4	Aluminum	402		ug/L	P415516	
		Antimony	0.050	U	ug/L	P415516	
		Arsenic	0.54		ug/L	P415516	
		Barium	17.8		ug/L	P415516	
		Beryllium	0.039	I	ug/L	P415516	
		Boron**	16.4		ug/L	P415516	
		Cadmium	0.020	U	ug/L	P415516	
		Chromium	0.52	I	ug/L	P415516	
		Cobalt	0.196		ug/L	P415516	
		Copper	0.40	U	ug/L	P415516	
		Lead	0.58		ug/L	P415516	
		Manganese	10.7		ug/L	P415516	
		Molybdenum	0.35	I	ug/L	P415516	
		Nickel	0.55	I	ug/L	P415516	
		Selenium	0.20	U	ug/L	P415516	
		Silver	0.010	U	ug/L	P415516	
		Thallium	0.10	U	ug/L	P415516	
	SM 2340 B-2011	Hardness	21.2		mg/L	P415516	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 06/27/2022.

Sample Location: FB_06202022

Collection Date/Time: 06/20/2022 12:10

Field ID: FB_06202022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335953	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P415506	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P415503	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P415942	
		Sulfate	0.20	U	mg SO4/L	P415947	
	SM 2320 B-2011	Total Alkalinity	1.0	U	mg CaCO3/L	P415768	
	SM 2540 C-2011	TDS	15	U	mg/L	P415902	
	SM 2540 D-2011	TSS	2	U	mg/L	P415891	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P415772	
2335954	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P415881	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P415787	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416226	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P415814	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P415622	
2335961	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P415516	
		Iron	30	U	ug/L	P415516	
		Magnesium	0.040	U	mg/L	P415516	
		Potassium	0.30	U	mg/L	P415516	
		Sodium	0.50	U	mg/L	P415516	
		Strontium	2.0	U	ug/L	P415516	
		Tin	3.0	U	ug/L	P415516	
		Titanium	0.75	U	ug/L	P415516	
		Vanadium	2.0	U	ug/L	P415516	
		Zinc	5.0	U	ug/L	P415516	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P415516	
		Antimony	0.050	U	ug/L	P415516	
		Arsenic	0.050	U	ug/L	P415516	
		Barium	0.20	U	ug/L	P415516	
		Beryllium	0.010	U	ug/L	P415516	
		Boron**	2.0	U	ug/L	P415516	
		Cadmium	0.020	U	ug/L	P415516	
		Chromium	0.40	U	ug/L	P415516	
		Cobalt	0.020	U	ug/L	P415516	
		Copper	0.40	U	ug/L	P415516	
		Lead	0.20	U	ug/L	P415516	
		Manganese	0.10	U	ug/L	P415516	
		Molybdenum	0.15	U	ug/L	P415516	
		Nickel	0.50	U	ug/L	P415516	
		Selenium	0.20	U	ug/L	P415516	
		Silver	0.010	U	ug/L	P415516	
		Thallium	0.10	U	ug/L	P415516	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P415516	

Ref. Method and Comment:

SM 2320 B-2011: The MDL was elevated due to analytical difficulties.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P415506

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415502

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415503

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415516

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415942

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415947

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415881

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415787

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416226

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415814

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P415768

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P415769

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P415902

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P415891

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P415895

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P415772

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P415622

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P415506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	91.7		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.5		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.5		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	107		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	102		P	85 - 115
Sodium	99.1		P	85 - 115
Strontium	98.3		P	85 - 115
Tin	101		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	95.8		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	106		P	85 - 115
Antimony	108		P	85 - 115
Arsenic	99.9		P	85 - 115
Barium	109		P	85 - 115
Beryllium	101		P	85 - 115
Boron	106		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	103		P	85 - 115
Copper	99.9		P	85 - 115
Lead	98.6		P	85 - 115
Manganese	107		P	85 - 115
Molybdenum	103		P	85 - 115
Nickel	102		P	85 - 115
Selenium	101		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P415768

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P415769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P415772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P415516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334462	Calcium	96.4		P	80 - 120
2334462	Iron	109		P	80 - 120
2334462	Magnesium	109		P	80 - 120
2334462	Potassium	101		P	80 - 120
2334462	Sodium	103		P	80 - 120
2334462	Strontium	101		P	80 - 120
2334462	Tin	103		P	80 - 120
2334462	Titanium	106		P	80 - 120
2334462	Vanadium	102		P	80 - 120
2334462	Zinc	103		P	80 - 120
2336029	Calcium	98.6		P	80 - 120
2336029	Iron	104	107	P/P	80 - 120
2336029	Magnesium	104	108	P/P	80 - 120
2336029	Potassium	100	101	P/P	80 - 120
2336029	Sodium	95.5	97.6	P/P	80 - 120
2336029	Strontium	97.7	99.2	P/P	80 - 120
2336029	Tin	97.8	99.7	P/P	80 - 120
2336029	Titanium	102	103	P/P	80 - 120
2336029	Vanadium	94.9	95.8	P/P	80 - 120
2336029	Zinc	100	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334462	Aluminum	105		P	80 - 120
2334462	Antimony	109		P	80 - 120
2334462	Arsenic	101		P	80 - 120
2334462	Barium	109		P	80 - 120
2334462	Beryllium	101		P	80 - 120
2334462	Boron	108		P	80 - 120
2334462	Cadmium	108		P	80 - 120
2334462	Chromium	104		P	80 - 120
2334462	Cobalt	103		P	80 - 120
2334462	Copper	97.8		P	80 - 120
2334462	Lead	98.8		P	80 - 120
2334462	Manganese	107		P	80 - 120
2334462	Molybdenum	106		P	80 - 120
2334462	Nickel	99.9		P	80 - 120
2334462	Selenium	99.9		P	80 - 120
2334462	Silver	104		P	80 - 120
2334462	Thallium	105		P	80 - 120
2336029	Aluminum	108	108	P/P	80 - 120
2336029	Antimony	105	109	P/P	80 - 120
2336029	Arsenic	102	103	P/P	80 - 120
2336029	Barium	109	110	P/P	80 - 120
2336029	Beryllium	102	104	P/P	80 - 120
2336029	Boron	108	106	P/P	80 - 120
2336029	Cadmium	103	104	P/P	80 - 120
2336029	Chromium	102	104	P/P	80 - 120
2336029	Cobalt	103	105	P/P	80 - 120
2336029	Copper	102	104	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336029	Lead	99.4	99.7	P/P	80 - 120
2336029	Manganese	105	107	P/P	80 - 120
2336029	Molybdenum	104	106	P/P	80 - 120
2336029	Nickel	99.6	102	P/P	80 - 120
2336029	Selenium	103	103	P/P	80 - 120
2336029	Silver	103	104	P/P	80 - 120
2336029	Thallium	105	105	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336037	Chloride	98.2		P	90 - 110
2336038	Chloride	95.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336037	Sulfate	98.3		P	90 - 110
2336038	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P415881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335780	Ammonia-N	96.4	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P415991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335950	Ammonia-N	95.4	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P415785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335801	Kjeldahl Nitrogen	110	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P415787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335631	Kjeldahl Nitrogen	90.8	85.9	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P416201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335950	NO2NO3-N	100	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335976	NO2NO3-N	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335406	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336164	Total-P	105	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P415772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336312	Fluoride	101	101	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333620	Fluoride	99.0	99.0	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335689	Organic Carbon	97.1	97.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P415506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335777	Color (true)	0.0114	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335624	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336017	Turbidity	0.254	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336029	Calcium	1.02	Spike	P	0 - 20
2336029	Iron	3.02	Spike	P	0 - 20
2336029	Magnesium	2.62	Spike	P	0 - 20
2336029	Potassium	1.17	Spike	P	0 - 20
2336029	Sodium	1.35	Spike	P	0 - 20
2336029	Strontium	1.56	Spike	P	0 - 20
2336029	Tin	1.97	Spike	P	0 - 20
2336029	Titanium	0.697	Spike	P	0 - 20
2336029	Vanadium	0.898	Spike	P	0 - 20
2336029	Zinc	1.02	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336029	Aluminum	0.0885	Spike	P	0 - 20
2336029	Antimony	3.15	Spike	P	0 - 20
2336029	Arsenic	0.482	Spike	P	0 - 20
2336029	Barium	1.24	Spike	P	0 - 20
2336029	Beryllium	2.03	Spike	P	0 - 20
2336029	Boron	1.65	Spike	P	0 - 20
2336029	Cadmium	0.997	Spike	P	0 - 20
2336029	Chromium	2.58	Spike	P	0 - 20
2336029	Cobalt	1.63	Spike	P	0 - 20
2336029	Copper	1.81	Spike	P	0 - 20
2336029	Lead	0.232	Spike	P	0 - 20
2336029	Manganese	1.39	Spike	P	0 - 20
2336029	Molybdenum	1.49	Spike	P	0 - 20
2336029	Nickel	1.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336029	Selenium	0.426	Spike	P	0 - 20
2336029	Silver	1.10	Spike	P	0 - 20
2336029	Thallium	0.883	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336037	Chloride	0.461	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336037	Sulfate	0.155	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335780	Ammonia-N	0.177	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335950	Ammonia-N	2.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335801	Kjeldahl Nitrogen	2.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335631	Kjeldahl Nitrogen	4.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335950	NO2NO3-N	2.84	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335976	NO2NO3-N	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335406	Total-P	0.489	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336164	Total-P	0.372	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P415768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336312	Total Alkalinity	0.00338	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P415769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335322	Total Alkalinity	0.391	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P415902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335661	TDS	2.39	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P415772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336312	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333620	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P415622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335689	Organic Carbon	0.372	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112963

Included Lab Sample IDs: 2335949, 2335951, 2335953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	100	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A112965

Included Lab Sample IDs: 2335951, 2335953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.5	93.9	P/P	85 - 115
Color (true)	97.2	97.6	P/P	85 - 115

Reference Method: SM 5310 B-2011

Run ID: A113000

Included Lab Sample IDs: 2335950, 2335952, 2335954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A113025

Included Lab Sample IDs: 2335960, 2335961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	95.2	P/P	90 - 110
Calcium	98.0	101	P/P	90 - 110
Iron	103	96.0	P/P	90 - 110
Iron	99.7	102	P/P	90 - 110
Magnesium	104	96.9	P/P	90 - 110
Magnesium	99.5	103	P/P	90 - 110
Potassium	100	99.6	P/P	90 - 110
Potassium	100	93.8	P/P	90 - 110
Sodium	101	99.2	P/P	90 - 110
Sodium	99.5	91.4	P/P	90 - 110
Strontium	104	99.7	P/P	90 - 110
Tin	102	94.6	P/P	90 - 110
Tin	97.2	100	P/P	90 - 110
Titanium	103	96.2	P/P	90 - 110
Titanium	99.1	101	P/P	90 - 110
Vanadium	102	96.2	P/P	90 - 110
Vanadium	99.1	101	P/P	90 - 110
Zinc	102	95.5	P/P	90 - 110
Zinc	98.5	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A113059

Included Lab Sample IDs: 2335960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	100	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A113067

Included Lab Sample IDs: 2335949, 2335951, 2335953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.9	P/P	90 - 110
Total Alkalinity	97.8	101	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113067

Included Lab Sample IDs: 2335949, 2335951, 2335953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110
Fluoride	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A113085

Included Lab Sample IDs: 2335960, 2335961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	103	P/P	90 - 110
Aluminum	104	105	P/P	90 - 110
Antimony	104	104	P/P	90 - 110
Antimony	104	103	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Arsenic	99.4	98.6	P/P	90 - 110
Barium	103	105	P/P	90 - 110
Barium	103	102	P/P	90 - 110
Beryllium	98.3	97.5	P/P	90 - 110
Beryllium	98.5	102	P/P	90 - 110
Boron	103	100	P/P	90 - 110
Boron	104	101	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Cadmium	103	101	P/P	90 - 110
Chromium	100	100	P/P	90 - 110
Chromium	101	103	P/P	90 - 110
Cobalt	101	102	P/P	90 - 110
Cobalt	99.5	99.4	P/P	90 - 110
Copper	100	101	P/P	90 - 110
Copper	97.9	98.3	P/P	90 - 110
Lead	95.3	97.1	P/P	90 - 110
Lead	96.4	95.5	P/P	90 - 110
Manganese	104	105	P/P	90 - 110
Manganese	104	103	P/P	90 - 110
Molybdenum	100	101	P/P	90 - 110
Molybdenum	99.2	98.2	P/P	90 - 110
Nickel	98.0	97.6	P/P	90 - 110
Nickel	99.9	101	P/P	90 - 110
Selenium	101	98.8	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Silver	101	100	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Thallium	97.5	101	P/P	90 - 110
Thallium	99.5	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113138

Included Lab Sample IDs: 2335952, 2335954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	98.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113156

Included Lab Sample IDs: 2335951, 2335953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.4	P/P	90 - 110
Sulfate	99.2	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113163

Included Lab Sample IDs: 2335950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113171

Included Lab Sample IDs: 2335950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113179

Included Lab Sample IDs: 2335952, 2335954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113208

Included Lab Sample IDs: 2335952, 2335954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113279

Included Lab Sample IDs: 2335950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113298

Included Lab Sample IDs: 2335950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113310

Included Lab Sample IDs: 2335952, 2335954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	91.7				0.0114	
EPA 180.1 Rev. 2.0	Turbidity	96.5				0.0	
	Turbidity	96.5				0.254	
EPA 200.7 Rev. 4.4	Calcium	104	96.4	98.6			1.02
	Iron	107	109	104	107		3.02
	Magnesium	110	109	104	108		2.62
	Potassium	102	101	100	101		1.17
	Sodium	99.1	103	95.5	97.6		1.35
	Strontium	98.3	101	97.7	99.2		1.56
	Tin	101	103	97.8	99.7		1.97
	Titanium	103	106	102	103		0.697
	Vanadium	95.8	102	94.9	95.8		0.898
	Zinc	101	103	100	101		1.02
EPA 200.8 Rev. 5.4	Aluminum	106	108	108	105		0.0885
	Antimony	108	105	109	109		3.15
	Arsenic	99.9	102	103	101		0.482
	Barium	109	109	110	109		1.24
	Beryllium	101	102	104	101		2.03
	Boron	106	108	106	108		1.65
	Cadmium	106	104	108	103		0.997
	Chromium	102	102	104	104		2.58
	Cobalt	103	103	105	103		1.63
	Copper	99.9	102	104	97.8		1.81
	Lead	98.6	99.4	99.7	98.8		0.232
	Manganese	107	105	107	107		1.39
	Molybdenum	103	104	106	106		1.49
	Nickel	102	99.6	102	99.9		1.95
	Selenium	101	103	103	99.9		0.426
	Silver	104	103	104	104		1.10
	Thallium	103	105	105	105		0.883
EPA 300.0 Rev. 2.1	Chloride	97.6	98.2	95.7		0.461	
	Sulfate	97.5	98.3	96.8		0.155	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	96.4	96.6			0.177
	Ammonia-N	98.4	95.4	99.4			2.91
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	110	106			2.46
	Kjeldahl Nitrogen	95.6	90.8	85.9			4.29
EPA 353.2 Rev. 2.0	NO2NO3-N	103	100	103			2.84
	NO2NO3-N	100	107	105			1.14
EPA 365.1 Rev. 2.0	Total-P	102	102	103			0.489
	Total-P	107	105	105			0.372
SM 2320 B-2011	Total Alkalinity	101				0.0033	
	Total Alkalinity	102				0.391	
SM 2540 C-2011	TDS					2.39	
SM 4500-F- C-2011	Fluoride	101	101	101			0.0
	Fluoride	98.9	99.0	99.0			0.0
SM 5310 B-2011	Organic Carbon	94.0	97.1	97.6			0.372

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2335951, 2335953
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2335949, 2335951, 2335953

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2335960, 2335961
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2335960, 2335961
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2335951, 2335953
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2335951, 2335953
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2335950, 2335952, 2335954
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2335950, 2335952, 2335954
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2335950, 2335952, 2335954
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2335950, 2335952, 2335954
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2335949, 2335951, 2335953
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2335960, 2335961
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2335951, 2335953
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2335949, 2335951, 2335953
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2335949, 2335951, 2335953
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2335950, 2335952, 2335954

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	06/21/2022			06/21/2022 16:11	Anna M. Plaviak	2335953
	06/21/2022			06/21/2022 16:26	Anna M. Plaviak	2335951
	06/21/2022			06/21/2022 15:35	Khloe J Berg	2335949
EPA 180.1 Rev. 2.0	06/21/2022			06/21/2022 15:39	Khloe J Berg	2335951
	06/21/2022			06/21/2022 15:44	Khloe J Berg	2335953
	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/23/2022 16:24	McKinley C Carter	2335961
EPA 200.7 Rev. 4.4	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/23/2022 19:13	McKinley C Carter	2335960
	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/24/2022 15:49	McKinley C Carter	2335960
	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/24/2022 16:34	Emily M Philpot	2335961
EPA 200.8 Rev. 5.4	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/24/2022 20:29	Emily M Philpot	2335960
	06/21/2022			06/28/2022 14:24	Anna M. Plaviak	2335951
	06/21/2022			06/28/2022 14:36	Anna M. Plaviak	2335953
EPA 300.0 Rev. 2.1	06/21/2022			06/28/2022 11:14	Ping Hua	2335952
	06/21/2022			06/28/2022 11:17	Ping Hua	2335954
	06/21/2022			06/29/2022 15:11	Judith K. Clark	2335950
EPA 351.2 Rev. 2.0	06/21/2022	06/28/2022 09:59	Samantha L Bates	06/29/2022 15:08	Alexandra J Mattheus	2335952
	06/21/2022	06/28/2022 09:59	Samantha L Bates	06/29/2022 15:10	Alexandra J Mattheus	2335954
	06/21/2022	06/28/2022 15:50	Samantha L Bates	06/29/2022 13:22	Alexandra J Mattheus	2335950
EPA 353.2 Rev. 2.0	06/21/2022			07/05/2022 14:44	Touraj Touran	2335950
	06/21/2022			07/06/2022 12:33	Judith K. Clark	2335952
	06/21/2022			07/06/2022 12:34	Judith K. Clark	2335954
EPA 365.1 Rev. 2.0	06/21/2022	06/28/2022 16:02	Adam P Silver	06/30/2022 14:40	James L Waggeberby	2335954
	06/21/2022	06/28/2022 16:02	Adam P Silver	06/30/2022 14:42	James L Waggeberby	2335952
	06/21/2022	06/28/2022 16:02	Adam P Silver	07/05/2022 13:48	Simonne.V. Calhoun	2335950
SM 2320 B-2011	06/21/2022			06/25/2022 10:03	Dale L. Simmons	2335951
	06/21/2022			06/25/2022 10:13	Dale L. Simmons	2335953
	06/21/2022			06/25/2022 19:13	Dale L. Simmons	2335949
SM 2340 B-2011	06/21/2022			06/23/2022 16:24	McKinley C Carter	2335961
	06/21/2022			06/23/2022 19:13	McKinley C Carter	2335960
SM 2540 C-2011	06/21/2022			06/24/2022 15:21	Yijie Li	2335951, 2335953
SM 2540 D-2011	06/21/2022			06/24/2022 15:21	Yijie Li	2335949, 2335951, 2335953
SM 4500-F- C-2011	06/21/2022			06/25/2022 10:03	Dale L. Simmons	2335951
	06/21/2022			06/25/2022 10:13	Dale L. Simmons	2335953
	06/21/2022			06/25/2022 16:18	Dale L. Simmons	2335949
SM 5310 B-2011	06/21/2022			06/22/2022 19:34	Khloe J Berg	2335950
	06/21/2022			06/22/2022 19:49	Khloe J Berg	2335952
	06/21/2022			06/22/2022 20:03	Khloe J Berg	2335954